

課程名稱 (英)	Electronic and Optoelectronic Polymers		
授課教師資訊	姓名: 陳文章與闕居振 所屬單位: 工 學院 化學工程學 系所 E-mail: chenwc@ntu.edu.tw, cchueh@ntu.edu.tw 電話: 23628398, 33661734		
開課時間	109學年 <input type="checkbox"/> 一學年 <input checked="" type="checkbox"/> 第二學期	必/選修	<input type="checkbox"/> 必修 <input checked="" type="checkbox"/> 選修
課程識別碼	524 U0640	班次	
預計修課人數	40	學分數	3.0
課程屬性	<input type="checkbox"/> 新開課程 (未曾開授之英語授課課程) <input checked="" type="checkbox"/> 續開課程		
檢附資料	<input checked="" type="checkbox"/> 續開課程請檢附上次開課期末教學意見調查結果		
Course Syllabus in English			
Course Description	This course will be divided into two parts: 1. design, synthesis and properties of conjugated polymers. 2. latest trends in organic optoelectronic materials The main purpose is to allow students to the field to grasp the basics, whilst also ensuring that they have the most up-to-date overview of the latest research.		
Course Requirements	With the background of organic/polymer chemistry, physical chemistry and basic polymer related knowledge.		
Course Objectives	1. To exercise problem solving skills by employing engineering theory and operating practices 2. To utilize core engineering knowledge to promote the advancement and innovation of engineering technology 3. To foster the ability to discover, analyze, explore and solve complex problems (special emphasis in graduate school)		
Learning Outcomes	1. Familiar with the design, synthesis and applications of conjugated polymers. 2. Grasp the basics of organic optoelectronics and the mainstream applications. 3. Capable of interpreting the scientific results related to organic optoelectronics and designing potential applications.		
Required Readings	<ul style="list-style-type: none"> ● Polymers: Chemistry and Physics of Modern Materials, Third Edition, J. M. G. Cowie and Valeria Arrighi. ● Polymer Chemistry, Second Edition, Paul C. Hiemenz and Timothy P. Lodge. ● Principles of Polymerization, Fourth Edition, George Odian. ● Organic Optoelectronics, Edited by Wenping Hu, Wiley-VCH Verlag GmbH & Co. KGaA ● Organic Optoelectronic Materials, Edited by Yongfang Li, Springer ● Scientific papers 		
Grading	Mid-term Exam (40%), Final Exam (40%), Attendance (10%) and Written Report (10%)		
Course Schedule in English			
Week	Date	Topic	Lecturer
Week 1	2/24	Introduction to Electronic and Optoelectronic Polymers	Wen-Chang Chen
Week 2	3/3	Conjugated Polymers: Design of Conjugated Polymers	Wen-Chang Chen

Week 3	3/10	Conjugated Polymers: Synthesis of Conjugated Polymers	Wen-Chang Chen
Week 4	3/17	Conjugated Polymers: Properties of Conjugated Polymers	Wen-Chang Chen
Week 5	3/24	Conjugated Polymers for Light-emitting Diodes (1)	Wen-Chang Chen
Week 6	3/31	Conjugated Polymers for Light-emitting Diodes (2)	Wen-Chang Chen
Week 7	4/7	Conjugated Polymers for Field Effect Transistors (1)	Wen-Chang Chen
Week 8	4/14	Conjugated Polymers for Field Effect Transistors (2)	Wen-Chang Chen
Week 9	4/21	Mid-term Exam	Wen-Chang Chen
Week 10	4/28	Conjugated Polymers for Photovoltaic Cells (1)	Chu-Chen Chueh
Week 11	5/5	Conjugated Polymers for Photovoltaic Cells (2)	Chu-Chen Chueh
Week 12	5/12	Organic Electrical Memory Materials (1)	Chu-Chen Chueh
Week 13	5/19	Organic Electrical Memory Materials (2)	Chu-Chen Chueh
Week 14	5/26	Organic Electrical Memory Device (1)	Chu-Chen Chueh
Week 15	6/2	Organic Electrical Memory Device (2)	Chu-Chen Chueh
Week 16	6/9	Conjugated Polymers for Stretchable Electronics (1)	Chu-Chen Chueh
Week 17	6/16	Conjugated Polymers for Stretchable Electronics (2)	Chu-Chen Chueh
Week 18	6/23	Final Exam	Chu-Chen Chueh